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A STUDY OF THE SOCIAL IMPACT OF THE TEXAS SHRIMP CLOSURE

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ABSTRACT

The Gulf of Mexico Fishery Management Council is one of eight such councils established by federal law in 1976. One of the most controversial management measures adopted by the Council has been a seasonal closure of the shrimp fishery in federal waters off Texas, beginning in 1981, which coincided with the long-standing seasonal closure of Texas state waters. Biological and economic effects of the federal closure have been monitored annually, but efforts to assess social impacts of the closure did not begin systematically until 1986. This paper reports the results of surveys initiated from the Galveston Laboratory of the National Marine Fisheries Service to study the social effects of the Texas shrimp closure in the offshore fishery throughout the Gulf during 1986 and 1987 and the inshore fishery of selected areas in Texas and Louisiana in 1987. Topics include vessel movements, employment patterns, and attitudes toward the closure, with an examination of differences and similarities in relation to such variables as age, years fishing experience, ethnicity, and geographic area.

Introduction

The Gulf of Mexico Fishery Management Council is one of eight such councils established under the Federal Fisheries Conservation and Management Act of 1976. One of the most controversial management measures adopted by the Council was an annual, early summer closure of the shrimp fishery in federal waters off the coast of Texas to coincide with a long-standing closure of state waters. The federal closure has been in effect since 1981; but the size of the area closed was reduced from 200 miles to 15 miles in 1986. The objective of the closure is to allow brown shrimp to reach a larger size before harvesting to increase the value of the fishery, since larger shrimp bring a higher price than smaller ones.

Each year the National Marine Fisheries Service has monitored the biological and economic effects of the closure. Despite urging by Paredes, an anthropologist, and others on the Council Advisory Committees, the Council did not request, until 1986, that data be systematically gathered to study the social impacts of the closure. In that year a few "social questions" were added to the interview schedule used by port agents in gathering biological and economic data on the closure. In 1987 NMFS again collected social data on the offshore shrimp fishery using an interview form that built upon and refined the previous year's effort. In addition, the Galveston Laboratory of NMFS secured funding to conduct a study of the inshore shrimp fishery of the upper Texas coast and adjacent parts of Louisiana, giving special attention to possible effects of the Texas Closure on those areas.

Here we present some of the results from the 1986 and 1987 surveys pertaining to the offshore fishery and preliminary findings from the 1987 inshore study.

Offshore

To determine the sociological impact of the Texas Closure Regulations on the offshore shrimp fishery in the Gulf of Mexico, vessel captains were interviewed in thirteen port areas by National Marine Fisheries Service port agents in the summers of 1986 and 1987. The selected port areas included six Texas areas, three Louisiana areas, one Mississippi port, one Alabama port, and two Florida ports. Interviews in each area were conducted with the first thirty captains who agreed to be interviewed. Questions asked during the 1986 survey dealt with topics such as number of years they had been fishing for shrimp, what employment captains had during the 1985 and 1986 closures, and what they thought of the closure of federal waters off Texas.

Questions asked during the 1987 survey were developed from answers received during the initial survey and were much more sharply directed. Questions dealt with such topics as vessel type, ethnicity of captain, their opinions on the purpose of closure, the best distance of closure, and advantages and disadvantages of the closure. Responses of captains during the 1987 survey that were from similar questions to those asked in 1986 were analyzed in the same fashion as the 1986 data so comparisons could be made. Data were summarized either by state, if the vessel was from a non-Texas port, or by location (lower or upper coast) if the vessel was from a Texas port. A total of 346 captains were interviewed in 1986. During 1987 only 277 vessel captains were interviewed.

Chi-squared analysis by area revealed that responses to questions about the federal closure off Texas were independent of the date the survey was conducted each year, thus increasing confidence that opinions were not biased by exogenous factors occurring over the several days of the surveys.

Captains from Florida, Alabama and lower Texas ports were generally in favor of a closure of federal waters off Texas during 1986. Captains from Louisiana and upper Texas ports were generally against the closure of federal waters off Texas, while captains from Mississippi generally did not have opinions about the Texas closure.

Most of the captains from nonTexas ports who favored a closure of federal waters off Texas did not state a preferred closure distance. For the few captains who did have an expressed opinion, those from Florida wanted a 15 mile closure, while those from Alabama and Louisiana wanted a 200 mile closure.

On the other hand, most captains from Texas who wanted a closure had an opinion about the distance of the closure off Texas. Most of the captains from lower Texas ports wanted a 200 mile closure, while most captains from upper Texas ports wanted only a 15 mile closure.

When the 1986 closure responses were split into different classes by number of years a particular Gulf captain had been in the commercial shrimp fishing business, differences in opinions were seen. The greatest percentage of captains in favor of the closure were in the middle age groups while the least number in favor were in the earliest age group.

In the 1987 survey, captains were asked what they thought was the purpose of federal closure off Texas. Responses were summarized into four broad categories: 1) no opinion, 2) I don't know, 3) allow shrimp to grow larger and 4) political. Overall, a little over half of the Gulf captains seemed to know that the purpose of the Texas Closure was to allow small brown shrimp to grow before capture. Only Florida, Alabama, Mississippi and lower Texas ports had a majority of their captains respond in this manner to the question. Answers from Louisiana were divided between shrimp growth and no opinion, while responses from upper Texas ports were split into three categories: shrimp growth, I don't know, and political. The upper Texas coast results are partly accounted for by ethnicity. The majority of those that did not know the reason for the closure or that had no opinion about the closure were of Asian descent; 31% of the upper Texas coast interviewees. All other ethnic groups seemed to be better informed about the purpose of the closure.

Opinions gathered in 1987, about whether or not to have a federal closure, were similar to those received in 1986. Alabama and lower Texas ports had the most captains in favor of a closure, with most of the Alabama captains in favor of a closure wanting a 15 mile closure and most of the lower Texas port captains in favor of the 200 mile closure. Florida captains also showed a majority in favor of the closure, with a large percentage favoring a 200 mile closure. Mississippi captains were equally split with regards to opinions about the closure. Most did not select a closure distance, but those who did select, selected the 200 mile closure distance. Again in 1987, captains from Louisiana and upper Texas ports were against the closure of federal waters off Texas. Of the small percentages in favor of the closure, most selected the 15 mile closure as the one they preferred.

Overall, thirty-nine percent of the captains in the Gulf were against the closure, while fifty-one percent were in favor of it. Among those captains who knew the managerial purpose of the closure, however, the number in favor of the closure was greatly increased, while the number against the closure was reduced.

When captains were categorized by the type of vessel, ice or freezer, captains of freezer boats were mostly in favor of the closure, with most favoring a 200 mile closure. A great majority of the freezer boats were from the lower Texas coast. Captains from ice boats were almost equally split between not having a closure and having a closure. Those favoring the closure were more in favor of the 15 mile closure than the 200 mile closure.

When responses about the closure were placed into different groups by the number of years the captain had been a commercial shrimp fisherman, it appeared that an almost equal percentage of the captains in each age group were in favor of the closure. Negative responses increased as years in the fishery increased.

Captains were also asked what they felt was the biggest advantage of the closure and the biggest disadvantage of the closure. Most frequent answers about advantages fell into four major categories: 1) no opinion, 2) better catches, 3) no advantage and 4) better enforcement of closure. Most captains from Louisiana and upper Texas ports said there was no advantage to the closure. Perceived disadvantages of the closure comprised six major categories of responses: 1) no opinion, 2) pulse fishing, 3) too many out)of)state boats in home state, 4) no disadvantage, 5) not making any money because of closure, and 6) no enforcement. Captains from Mississippi were equally split between no opinion and too many out-of-state vessels in their state. Captains along the upper Texas coast most often responded that pulse fishing was a problem, while captains from Louisiana said that too many out-of-state vessels came to their state because of the closure. Captains along the lower Texas coast said enforcement was the worst problem, with less money because of closure being the next most frequent response.

Analysis of the employment data revealed that the percentage of captains who did not shrimp during the 1985 closure period (200 mile closure) was high only in the home ports of Florida, Freeport, Port Aransas and Brownsville, Texas. In Florida 12% of the captains interviewed did not shrimp during the closure in 1985 and the majority of them said they were unemployed. The percentage of Florida captains who did not shrimp during the 1986 closure period (15 mile closure) dropped to only 4%. In Freeport, 29% of the captains did not shrimp during the 1985 closure, but 50% said they were employed at another job. The number of captains not shrimping during the 1986 closure was only 14%. In port Aransas, 29% of the captains interviewed did not shrimp during the 1985 closure and most (90%) of them also said they were unemployed. During the 1986 closure the percentage that did not shrimp was reduced to 19%, but again most of these captains said they were employed. In Brownsville, Texas, 25% of the interviewed captains did not shrimp during the 1985 closure, but a little over half said they were employed at another job. This value was reduced to 11% during the 1986 closure and again most said they were employed at another job.

Inshore

A survey was administered to inshore shrimp captains from Galveston Bay, Texas, and Calcasieu Lake, Louisiana, in the summer of 1987. Interviewees were randomly selected from 1986 license lists of captains, supplied by the Texas Parks and Wildlife and the Louisiana Department of Wildlife and Fisheries. Three sets of lists containing 75 names each were generated for each region representing three pre-selected vessel size categories. Interviews were conducted with captains by telephone when possible. Questionnaires were mailed to those captains with unlisted numbers or without telephones. To supplement this effort, interviews were conducted at docks around the perimeter of each bay. This additional effort ensured that enough interviews were completed in the limited available time, that all regions around each Bay were represented in the survey, and that individuals unable to understand English were represented. In total, 159 interviews of captains were completed, 89 from Galveston Bay and 70 from Calcasieu Lake.

Most of the shrimp from Calcasieu Lake's inshore harvest were channeled through fish houses to markets outside of the community. Most of the remaining shrimp were used for personal consumption and a small amount was sold directly from the boat. The fish houses, in turn, sold most of their shrimp to processors and brokers. The remaining shrimp were sold to other dealers. Thus, the vertical marketing integration within this fishery existed largely between the fish houses and the processing plants.

In contrast, the shrimp distribution patterns of Galveston Bay was more directly tied into the local economy. As in Louisiana, most of the inshore harvest were sold to fish houses with the remainder distributed to bait camps, tourists, peddlers, or used for personal consumption. The fish houses sold only 40% of their shrimp to processors and brokers, with the remaining distributed to walk-in customers, other dealers, stores and restaurants and peddlers. Thus, the vertical marketing integration within the Galveston Bay fishery existed between harvesters, fish houses, and retail stores. The demographic profiles indicate that compared to Galveston Bay's inshore fishery, proportionally more of Calcasieu Lake's inshore shrimpers were younger and had entered the fishery

more recently. The median age of Galveston shrimpers was 47 compared to 39 for Calcasieu Lake shrimpers. Therefore, it is not surprising that greater numbers of Calcasieu Lake shrimpers had entered the fishery more recently than their Galveston Bay counterparts. Thirtyfive percent of the interviewed Galveston Bay captains had been commercial shrimpers for less than 10 years, compared to 44% of the interviewed Calcasieu Lake shrimpers. The greatest difference in the number of shrimpers who had entered each fishery in a given time period occurred between 6 and 10 years ago. Within this time period, 7% of the interviewed Galveston Bay population entered the fishery compared to 19% of the Calcasieu Lake population.

Fewer Calcasieu Lake shrimpers had come from families involved in fishing than Galveston Bay shrimpers. This trend in family involvement in fishing seems to reflect the age distribution that characterized the fisheries. In both regions those shrimpers with a family history in fishing tended to have been shrimpers themselves for longer than 10 years.

The Calcasieu Lake population differed from those in Galveston with respect to their occupational histories. Calcasieu Lake shrimpers were characterized by less diversity in their occupational histories compared to Galveston Bay shrimpers. The results indicate that Calcasieu Lake shrimpers had occupational histories dominated by skilled manual labor (70%). Of the remaining: 7% were previously employed in service occupations, 9% were small business owners or managers, 2% were technicians, and 9% had no other skills.

Galveston Bay shrimpers had a more diverse range of occupational histories. Like the Calcasieu Lake population, most Galveston Bay shrimpers were previously employed in skilled manual labor jobs (48%). Of the remaining: 9% were employed in service occupations, 9% were owners or managers of small businesses, 8% were technicians, 4% were professional, 9% were un-skilled labor, and 10% had no other skills.

Age distribution, years as commercial shrimpers, family history in fishing, and employment histories suggest that growth in the inshore Calcasieu Lake fishery may have resulted from native residents being displaced from other employment, most notably from the oil and gas industry and other jobs involving manual labor. The inshore shrimp fishery of Galveston Bay is an older fishery experiencing an out-migration of native participants replaced by a growing number of Southeast Asian immigrants. This is evidenced by a 280% increase in the number of Southeast Asian boats form approximately 154 to 437 despite a 33% decrease in the overall number of boats in Galveston Bay's inshore fishery from 1981 to 1986.

The Texas Closure had little reported perceived impact on either inshore fishery. However, Galveston Bay shrimpers felt more impacted by the offshore closure than Calcasieu Lake shrimpers. Overall, thirty percent of Galveston Bay's inshore shrimpers reported being affected by the closure, approximately equally divided between medium and large boats. The reported impacts upon this group of Galveston Bay shrimpers included displacement during the closure to either Louisiana or distances greater than 15 miles from shore, overcrowded fishing grounds in Galveston Bay, and reduction in the price of shrimp prior to the opening. Only 20% of Calcasieu Lake's inshore shrimpers reported personal impacts of the Texas Closure. Most of these were captains of larger boats that participated in both the inshore and offshore fisheries. The reported impacts of the closure on these Calcasieu Lake shrimpers were crowded fishing grounds and reduction in catch, available dockspace, and supplies.

CONCLUSIONS

With these limited data and analyses it is impossible to reach detailed conclusions about the social impacts of the Texas Closure, much less the policy implications of our results. In general, however, we observe that while direct impacts of the closure on the social patterns of shrimpers and their communities appear to be negligible in most areas, in others the effects are more noticeable. Much more sophisticated research must be done to determine any social impacts that are beyond detection through direct reporting of interviewees.

At the opinion level there are important differences in response to the closure along geographic and ethnic lines and in relation to vessel size. One of the clearest findings of this research is the extent to which the closure is negatively perceived in the border area between Texas and Louisiana, while the closure is supported strongly in south Texas where there is a larger number of freezer boats. The first finding can be interpreted as an instance of the closure compounding interstate competition, while the latter appears to reflect the competitive advantage that is given vessels who can harvest the larger shrimp in greater quantities once the closure ends. In any event, it is clear that at the very least the effects of the closure are perceived collectively very differently from one area of the Gulf to another.

Simply doing this research appears to have had some beneficial effects in this management process. The report on the 1986 social survey received considerable notice among managers and their advisory committees. Referring to the sometimes scatological, uncensored opinions reproduced verbatim in the 1986 write-up, the director of the Galveston lab joked, "this is the first X-rated reported we've produced." Perhaps more telling than any other response is that a number of the members of the scientific and statistical committee of the Gulf Council expressed great surprise and dismay when it was reported to them in January 1988 that 40% of the interviewees in the 1987 study did not know the management objectives of the closure. On the other hand, some NMFS workers closer to the fishery found it encouraging that there was only 40% who did not know the purpose of the closure. Nonetheless, given the long delay in beginning to assess the social impacts of the Texas closure it is ironic but heartening that on January 13, 1988, following the presentation of the annual review of the Texas closure by NMFS staff, the SSC unanimously adopted a position, introduced by a biologist, that concludes with:

The Committee also recognized that the sociological studies conducted in 1986 and 1987 indicate that the adverse impacts or benefits of the closure may not be equally distributed among participants in the fishery. Therefore, the Committee recommends that these studies be continued. The Committee does not, however, see the need of continuing a complete analysis of the biological implications of the Texas closure, since each analysis to date has documented the benefits of the closure.